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ABSTRACT

Integrated learning refers to the interrelatedness of subject and skill areas within and across grades of a school program. A description is given of the framework for integrated learning programs developed by the state of North Carolina. This monograph addresses factors that influence efforts toward integrated learning as well as processes for implementation. The recurring themes of communication, collaboration, and coordination are evident, since integrated learning requires that teachers work together and plan school activities in a more holistic way. The keystone of this approach is teachers working as a team. The personnel, time, resources, and facilities needed for successful integrated learning programs are described, as well as the levels of responsibility on the part of the state, the school district, the school, and the classroom. Techniques used in developing an integrated curriculum are discussed, e.g., webbing, topic organizers, goal files, and modular thematic units. A sample plan of steps for integration is presented. A bibliography is included. (JD)

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Integrated Learning

WHAT • WHY • HOW



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NORTH CAROLINA DEPARTMENT OF PUBLIC INSTRUCTION

INSTRUCTIONAL SERVICES CURRICULUM SERIES

NUMBER 1

INTEGRATED LEARNING:

WHAT, WHY, HOW

Instructional Services

North Carolina Department of Public Instruction

Raleigh, North Carolina

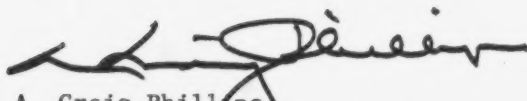
1987

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FOREWORD

The Basic Education Program has brought renewed energy and focus to several areas of instructional planning, development, and implementation. Though already present in many schools across this state, integrated learning is one of those areas that we are, in essence, revisiting. For several decades leaders in education have pointed to the fragmentation of the school curriculum highlighting the need for more integrated approaches. We know that learning is a natural, integrated process though many times students fail to get this unified view of knowledge and skills. This publication provides a framework for integration suggesting definitions and processes. Like other aspects of the Basic Education Program, this publication encourages educators to accept responsibility for all aspects of student learning.



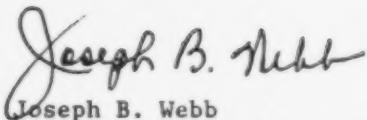
A. Craig Phillips
State Superintendent of Public Instruction

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Joseph B. Webb
Assistant State Superintendent
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THE FRAMEWORK

DEFINING INTEGRATION

Integrated learning refers to the interrelatedness of subject and skill areas within and across grades of a school program. Referenced in the literature by many terms (interdisciplinary units, integrated studies, thematic approach), integrated learning is not a new idea but rather an approach used regularly by many educators across this state. In North Carolina, integrated learning could involve the following subject and skill areas:

Subject Area/Skill Areas

- Arts Education
 - Dance Education
 - Music Education
 - Theatre Arts
 - Visual Arts
 - Folk Arts
- Communication Skills
- Guidance Skills
- Healthful Living
 - Health Education
 - Physical Education
 - Safety Education
- Library/Media & Computer Skills
- Mathematics
- Science
- Second Language Studies
 - Modern Languages
 - Classical Languages
- Social Studies
- Thinking Skills
- Vocational Education
 - Prevocational Education
 - Agricultural Education
 - Business & Office Education
 - Marketing Education
 - Health Occupations Education
 - Home Economics Education
 - Industrial Arts Education
 - Trade & Industrial Education

Not surprisingly there are several kinds of integrated learning:

A. Content Within a Subject or Skill Area

Probably one of the simplest but often most neglected forms of integration involves looking internally to one subject or skill area. Using Social Studies as an example, this involves an interweaving of history, geography, political science, anthropology, psychology, and sociology. This kind of integration calls for greater articulation within grades and individual schools but also across the various levels of schooling. Pertinent ques-

tions are "Does the Social Studies program build from the elementary to the middle to the high school?" and "What opportunities exist to ensure an interrelated scope and sequence?"

B. Skills with Subjects

An area of some improvement has been the utilization of selected skills in all disciplines and programs of study. "Writing Across the Curriculum" and recent efforts focused on Thinking Skills recognize that skill areas apply to the entire curriculum. Other skill areas (the remaining Communication Skills, Library/Media & Computer Skills, Guidance Skills, plus other skill areas from the various disciplines) also need to be addressed at each grade. Whether one considers Health Education or Mathematics, skill areas relate to every program of study.

C. Subject with Subjects

Subject into subject integration has typically occurred around thematic topics where two subjects are blended together and then block-scheduled or presented as a unique elective (e.g., History of the Arts, Humanities, Technology in History). Possibilities for this kind of integration could include: Dance and Theatre Arts, Science and Health, Folk Arts and Social Studies, Mathematics and Science, and Vocational Education with any of the other disciplines.

D. Skill with Skills

Besides a relevance to the various disciplines, skill areas relate to each other. Thinking Skills and Guidance Skills go hand in hand. Communication Skills are needed to address goals in Guidance, Library/Media & Computer work as well as the various levels of Thinking Skills. Skill areas are simply a part of the entire curriculum.

E. Skills/Subjects with Skills/Subjects

Total integration is a combination of all of the above, mixing skill and subject areas. It involves all programs of study with varying degrees of emphasis. It is typically developed around a theme, problem, question or issue. Total integration requires considerable planning time but probably provides the greatest benefit to students.

A CALL FOR INTEGRATION

For many years, leaders in education have pointed to the fragmentation of the school curriculum highlighting the need for more integrated programs. Several perspectives are listed below:

- A. Over three decades ago, Tyler (1949) stated that integration of the curriculum was one of three criteria needed to build an effective schema of organization of learning experiences. He defined integration as "the horizontal relationship of curriculum experiences" and viewed it as a "must" to help students gain a unified view of their learning.
- B. Goodlad in A Place Called School (1984) reported that a major problem in schooling is the "degree of unconnectedness it often has with the reality beyond school." Students should be gaining knowledge and using that which they gain to solve problems. Using knowledge for problem solving is what

we do in "real life" and school should not be made "unreal." Goodlad also pointed to the fragmentation between and among programs and recommended close articulation of elementary, middle, and senior high schools.

- C. Boyer (1986) criticized schools for presenting segmented, isolated subjects. For the future, he called for a curriculum that helped students understand a complex, integrated world. He maintained that students needed a program that allowed them "to see relationships that add up to life."
- D. Humphrey and others (1981) observed that school subjects are typically taught as discrete entities. There is little sense of connectedness among school subjects or among parts of the day. "Children are conditioned in the name of learning to the idea that knowledge and skills are conveyed through the means of separate subjects." Educators seem to assume students will fit it all together, but unfortunately they tend to learn what we teach and never make such connections.
- E. McHugh in a speech to the National Council of Teachers of English (1986) pointed to a continued lack of interrelatedness in the school program. She said educators presented a fragmented curriculum "seemingly removed from the urgent realities our students face daily." She underscored students' needs to see connections between school tasks and real life tasks and to apply what they learn in all areas and all subjects.
- F. Pumerantz (1979) observed that we had organized the curriculum into separate disciplines each with its band of defenders, its specialists, and its own department. However, he questioned: "Has anyone determined if this strict compartmentalization was best for students?"
- G. Bartkowki and Morse (1979) noted the lack of connectedness in school subjects and maintained that any integration of subject matter had to typically come from the student.

WHY INTEGRATED LEARNING

Including the comments previously mentioned, there are many reasons for the desirability of an integrated approach:

- A. The "real world" is integrated.
Though learning is a natural, integrated process, educators in order to organize school time have often defined "getting an education" as having separate and unrelated experiences in different disciplines. Despite this arrangement, one relies on the interrelatedness of learning in one's work and everyday life. Individuals do not purchase a car, cast a vote, or listen to a symphony performance with the knowledge and skill of a single discipline. In the real world, we mesh what we know and do.
- B. Students do best when learning is connected.
Recent research in the areas of effective teaching, reading in the content areas, and writing across the curriculum suggests that students learn and remember best those things that are reinforced and integrated in more than one curricular area. Students respond to the support of one subject area

for another. School subjects are also more meaningful to students if they are shown to have contact outside their own spheres (Sigurdson, 1981).

- C. Students become the focus of learning, not the teacher. Students first get hooked by a topic or focus that has a sense of wholeness. Because of the process-orientation of the approach, students are actively involved as decision-makers and problem-solvers. They have choices and can work with their peers. Though there is recognition of involvement at different ability and interest levels, a sense of group effort is still fostered (Johnson and others, 1988). Integrated units or programs create an air of enthusiasm among teachers, students, and the community. Students often consider such study "not like school" and "a real break from textbooks."
- D. Integrated programs are useful in tackling other areas of concern. Individual teachers or the entire professional staff have other goals that can be addressed successfully through an integrated curriculum approach (Sigurdson, 1981). Some examples of additional reasons to integrate include: broaden teachers' knowledge and understanding of all disciplines and goals at a particular grade level, link a successful program with a less successful one, draw on the strength of master teachers to assist less capable teachers, improve group achievement test scores in a particular area, increase community involvement, improve school spirit and a sense of belonging.
- E. It is difficult to teach subjects and skills in isolation during a 5 1/2 hour instructional day. The North Carolina Basic Education Program will provide many districts the opportunity to expand their curricula. Despite welcome additions, time will be at a premium. Integrated learning activities can contribute to the efficient use of time. Program offerings can be expanded and strengthened if students can work on two or more subject area objectives simultaneously. Integrated units between subjects and skills can provide instances of the same piece of work being marked from the perspective of several different subjects.

LEGISLATIVE SUPPORT & EXPECTATION

In 1984, the Elementary & Secondary School Reform Act directed the State Board of Education to develop a statewide curriculum that reflected "a rigorous academic course of study stressing mastery of integrated knowledge based on mastery of competencies in the basic skill areas rather than the study of isolated disciplines." Though the legislation also called for a standard course of study that presented the curriculum subject by subject, grade by grade, the Act still called for an emphasis on "mastery of integrated knowledge."

The intent of the Elementary and Secondary School Reform Act was to ensure action toward interrelatedness in learning. It did not dictate a total integrated day nor isolated, stand-alone content areas. The legislation did, however, call for the mastery of integrated knowledge, implying that during the school year, teachers and students should engage in ongoing integrated learning activities.

NORTH CAROLINA DEPARTMENT OF PUBLIC INSTRUCTION

As a result of the Elementary and Secondary School Reform Act, the Assistant State Superintendent for Instruction appointed an Integrated Learning Task Force to define integration, suggest processes for integration, and provide a sample unit representative of all instructional areas. This publication with assistance from Raleigh and Regional Center staff is part of the work of the Task Force. Additional ideas representing other grades across the curriculum will be forthcoming. Raleigh and Regional Center staff will continue their ongoing services using this and other publications as a resource. In addition, each Regional Center will work to serve as a clearinghouse for locally-developed integrated programs derived from the North Carolina Standard Course of Study.

THE "HOW TO" OF INTEGRATION

INTRODUCTION

Besides the "what" and "why" of integration, there is the basic question of the "how." This section addresses factors that influence efforts toward integrated learning as well as processes for implementation. Several recurring themes are evident: communication, collaboration, and coordination. There is nothing mystical about integrating subject and skill areas. It requires that teachers work together and plan school activities in a more holistic way. Topics and procedures may vary but the keystone in this approach is teachers working as a team.

CONDITIONS FOR SUCCESS

To develop integrated units or programs within a school, four factors are necessary for success:

A. Personnel

Teachers must be willing to participate in a team project with enthusiasm and commitment. Teachers must also be experts in representing the goals and objectives of their area(s) to other professional staff.

B. Time

Adequate time to plan and develop integrated units must be available. Teachers may be able to develop integrated programs using their regular planning time (during the day, after school). However, in most cases, additional time is required particularly if this is a first-time effort. Teachers must seek their principal's support with principals providing additional planning time on teacher workdays. There is no set amount of time necessary to plan integrated programs. The time varies greatly from one situation to another depending on the expertise and experiences of the teachers and the availability of needed resources.

C. Resources

Many resources will already be in place if goals are taken from the Standard Course of Study; however, new materials and supplies may be needed. Such requests should be small enough to be met through existing budgets. In addition to the traditional "packaged" materials, integrated units frequently involve more experiential supplies and equipment. Schools typically are able to borrow items or obtain contributions from local groups and businesses.

D. Facilities

Integrated learning activities have been implemented in all kinds of school structures and at all grade levels. Because students are more actively involved in their learning, teachers may need to utilize the halls, cafeteria, and auditorium to have sufficient work space.

LEVELS OF RESPONSIBILITY

When teachers plan any kind of program, they are affected by services and resources from the state, district level policies and procedures, circumstances in their schools, as well as the specifics of their own classroom situations. These four spheres have the potential to contribute to greater integration of the curriculum.

State Level

Over the years the N. C. Department of Public Instruction has been actively involved in many projects to integrate various subject and skill areas. Examples of such efforts include:

- . Integration of basic life, earth, and physical science concepts in grades 7-8 developed by the Division of Science
- . "The Process Approach to Writing," state-wide staff development for all teachers K-12 offered through the Division of Communication Skills
- . "Using Food Experiences to Reinforce Academic Objectives," a publication of the Division of Child Nutrition
- . "Traveling Through North Carolina," an eighth grade unit developed by the Divisions of Social Studies and Mathematics
- . "Work Patterns in Africa," a seventh grade unit provided by the Divisions of Social Studies and Vocational Education
- . "Arts Alive," an Instructional Television Series integrating Dance, Music, Theatre Arts, and Visual Arts developed in consultation with the North Carolina Division of Arts Education
- . Integrated Studies Summer Institutes for fourth and fifth grade teachers to integrate all subject and skill areas sponsored by Instructional Services staff, Region 7
- . K-3 Summer Staff Development Institutes focused on integrated learning offered by Instructional Services
- . Development of integrated competency listings for Vocational Education courses and Mathematics/Science/Social Studies/Communication Skills through research projects funded by the Division of Vocational Education
- . Staff development workshops on "Integration of Basic Skills in Vocational Education" for state vocational staff, teacher educators, and classroom teachers
- . "County Hunters," an eighth grade North Carolina history computer data base program developed by the Divisions of Social Studies and Library/Media and Computer Skills.

Besides programs available to all schools in North Carolina, state and regional

consultants have worked with individual districts on projects unique to their situation. A few recent projects are:

- . Person High School's "Doing of the Decades: The 20's Through the 60's," a school-wide project initiated by the media coordinators
- . Guy B. Phillips Junior High's "Be a Child of the Time" developed by language arts and media personnel
- . Haywood County Schools' correlated competencies and measures for Trade and Industrial Education/Math/Science and Industrial Arts/Math/Science

District Level

The Superintendent and staff have a definite impact on the direction of integrated learning in a district. Their decisions about money for staff development, the nature of grant proposals, and the topics at all meetings influence the opportunities for building a more interrelated school program.

Central office personnel specifically responsible for curriculum and instruction play a very direct role in facilitating integrated learning. In systems where several individuals represent different content areas, these people can work together on unifying projects. They can also initiate staff development programs as well as school visitations that increase exposure and understanding of the possibilities relative to integration. Central office personnel are also very important in planning regular meetings that focus on one or several areas K-12 and/or level meetings (elementary, middle, secondary) that look at issues particular to specific grades and programs. A move toward integration facilitates the need for greater communication, collaboration, and coordination.

School Level

Though many teachers have routinely integrated learning areas for students, schools with a principal who is a strong instructional leader have more opportunities to present learning in a holistic, meaningful way. Principals themselves can be very knowledgeable about appropriate possibilities for integration. Through their own study (readings, courses, workshops) they should be a source of ideas and expertise. Principals play a central role in determining the overall school organization as well as the day-to-day schedule. Providing common planning periods, limiting pull-out programs, initiating disciplinary/interdisciplinary grade level teams and committees, and protecting "instructional time" are all ways a principal can enhance efforts toward integration. Integrated learning programs are very time-intensive in the initial phases and the principal's willingness to structure this time to plan during the regular day, on teacher workdays, and even over the summer will determine the extent of integration in her/his school. Working with the budget, principals have the opportunity to orchestrate school-based staff development programs, send teachers to relevant conferences, as well as purchase needed supplies and materials. Principals also provide assistance with facilities when teachers request use of the halls, cafeteria, auditorium, or other areas necessary for additional work space. In all phases of integrated learning, the principal plays a key role in providing the time, resources, and facilities to assist teachers in their work.

Classroom Level

Teachers are at the heart of an integrated curriculum. It is their work that correlates subject and skill areas and brings to life the interrelatedness of what we learn and do. To develop integrated programs, teachers must have an understanding of the processes of integration, be committed and enthusiastic, be willing to work with their colleagues, be an expert in their area(s), be articulate to others regarding their goals and objectives, and have a growing understanding of the importance and purposes of other disciplines. Teachers can integrate subjects and skills in any organizational arrangement but situations do vary.

A. Self-contained (one teacher teaching all subjects or one teacher teaching all subjects supported by additional staff for selected programs)

1. Understanding that young children do not typically connect ideas and events, many elementary teachers have routinely integrated the curriculum around thematic units. Teachers who have this expertise are an excellent resource for those with less experience in this area.
2. Teachers in this arrangement should do additional planning with other teachers who share their students. More than just coordinating and checking with their colleagues, the homeroom teacher should meet and plan with individuals in the Arts, Exceptional Children, Guidance, Healthful Living, Second Languages, and Library/Media Skills. With the grade level typically being the focal point in this organization, grade level meetings can be an efficient and effective way to work with other professionals.
3. Dialogue across grade levels is necessary to address scope, sequence, problem areas, and the overall interrelatedness of the school curriculum. With each grade level having a representative, a Core Committee (could be the School Advisory Committee, Curriculum Review Committee, etc.) can routinely discuss subject and skill areas across the various grades.

B. Blocked (one teacher teaching two or more subjects)

1. In this situation teachers could possibly integrate subject and skill areas without the assistance of other teachers, confining themselves to their two or three subject/skill areas.
2. Teachers in blocked situations also need to address commonalities across subject and skill areas. Though an individual may be responsible for Math and Science, skills in Guidance, Library/Media and Computers, Writing and Thinking Skills are relevant to all disciplines. Blocking simply allows for one teacher to integrate several areas but does not eliminate the need for coordination with others at that grade level.
3. Like the self-contained situation, across-grade level communication both general and specific to a particular discipline is needed.

C. Departmentalized (one teacher teaching one subject)

1. Departmentalized situations present the most isolated approach to subject and skill areas. Teachers in this arrangement must utilize all the connecting ideas suggested for teachers in self-contained and blocked classes.
2. Departmentalized teachers should meet with all grade level staff looking for common goals that complement, reinforce, and blend similar topics and emphases. To initiate a team approach, teachers can begin small by focusing on skill areas that apply to all disciplines, e.g., writing across the curriculum, library research skills.
3. Departmentalized teachers should also meet with others in their discipline at their home school and with others at the different levels of schooling (K-12).

TECHNIQUES TO GET STARTED

A variety of techniques can assist teachers as they work toward a more integrated curriculum. These techniques can be used with any kind of integration. The purpose of such techniques is to provide structure and format generating ideas and organizing the way teachers work together. Teachers may "pick and choose" from the techniques that follow and will, no doubt, develop other organizers and ways to plan that fit their particular situations.

Webbing

Webbing is an open-ended planning process which allows teachers to see relationships between ideas and subject/skill areas. The webbing process is a tool that assists teachers in generating ideas which might be lost in more traditional planning techniques. Webbing is a multi-step process and can be done in at least two different ways.

A. Freeform Webbing

1. Place the topic to be explored in the center of a circle drawn on a chalkboard or chart paper.



Figure 1

2. Brainstorm in a free association manner.

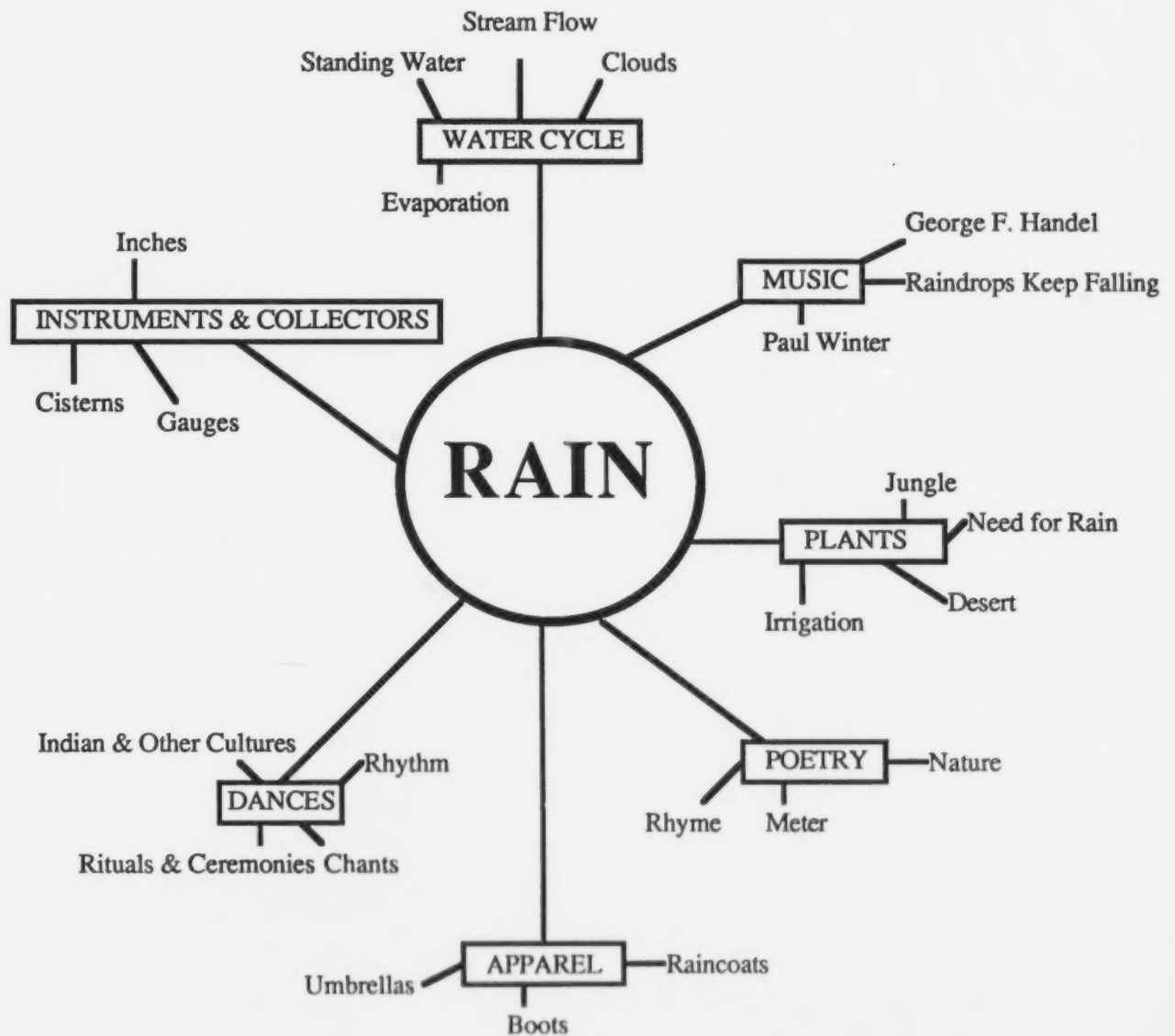


Figure 2

3. Categorize items by subject area. This process should reveal the connectedness between subjects and skills with topics occurring in several areas. The topic of "Poetry" is shown on the next page as an example.



Figure 3

4. Design specific activities related to each topic. Example: experiment with different shaped materials (e.g., cylinders, cones) for making a rain gauge. Using information from these experiments, design a gauge to use in a weather station.

B. Structured Webbing

1. Place the topic to be explored in the center drawn on the chalkboard or chart. Place subject and skill areas around the outside.



Figure 4

2. Brainstorm specific possibilities for concepts/skills to be developed.
3. Design activities.

Topic Organizers

Numerous outlines can be used in organizing materials for integrated studies. One format that could be used with several kinds of integration had these organizers (Sigurdson, 1981):

- A. Title - Brief but descriptive.
- B. Major Topics - Lists the major emphases of the unit.
- C. Rationale - States why teachers would benefit from utilizing the unit with their students.
- D. Time - Indicates the number of periods and days to complete the unit with their students.
- E. Subject Areas - Defines which subject/skill areas are covered in the unit with references to local and state curriculum guides.
- F. Intents - States broad goals and objectives with references to local and state curriculum guides.
- G. Activities - Presents the purpose of and ideas behind all activities, reasons for the particular sequence, possible variations in using the activities, and a complete description with visuals of how to actually do the activity.
- H. Resources - Provides a list of materials used in the study to include books, periodicals, and audiovisuals.
- I. Evaluation - Consists of the teacher's personal evaluation of the study seen in retrospect and the benefits to students at the end of the study.

Goal Files

A goal file can be developed in several ways though, in all cases, the basis of the file should be one or more goals and objectives from the Standard Course of Study and/or Teacher Handbook. Goal files can evolve around a specific goal evident in one subject/ skill area that can be applied through activities in other areas (Bartkowski and Morse, 1979). Teachers may also select a theme that provides a focus for activities and goals or perhaps an open-ended problem that can be studied from several perspectives. Listed below are sample cards taken from different goal files, each with a different approach.

Goal File Card #1 (Grade 1)

Focus: A speaking skill (Objective 2.4) in Second Languages, Grade 2 that requires the learner to name and describe people, places, and things.

Communication Skills (Grade 1)

- A. Goal/Objective - The learner will use speech to report and inform.
- B. Activity - Students draw pictures of their homes and describe them in the second language.

Library/Media and Computer Skills (Grade 1)

- A. Goal/Objective - The learner will design, produce, and/or select a variety of media formats to present information.
- B. Activity - The class will make a filmstrip for the overhead projector. Each student will draw a picture of an item and then record the word for that item on the cassette recorder.

Mathematics (Grade 1)

- A. Goal/Objective - The learner will identify whole numbers 0 to 100.
- B. Activity - The numbers 0-100 are placed in an envelope. The students draw a number and must identify it correctly in the second language.

Science (Grade 1)

- A. Goal/Objective - The learner will know that animals are alike and different.
- B. Activity - Students identify pictures of animals in the second language and make the correct animal sounds.

Social Studies (Grade 1)

- A. Goal/Objective - Students will identify various family roles.
- B. Activity - Students pretend they are in a large house. Each student plays a member of a family. As s/he is called, s/he enters the house and explains the relationship of others in the house to her/him in the second language.

Visual Arts (Grade 1)

- A. Goal/Objective - The learner will demonstrate an understanding of the basic elements of art.
- B. Activity - The class is divided into two teams. Various colored shapes are placed in the middle of the floor between the two teams. A member of each team selects a shape and must name the shape and color in the second language to score two points. The other team then takes a turn with one team member selecting a shape.

Goal File Card #2 (Grade 6)

Focus: A circus theme

Communication Skills (Grade 6)

- A. Goal/Objective - The learner will use prewriting to generate ideas for writing and then write a first draft based on a prewriting experience.
- B. Activity - Using a drawing of a clown's face as a prewriting activity students may: write a description of the clown, finish the sentence "I'd like to be a clown because. . .," describe a day in the life of a clown, and/or write about another clown-related topic that s/he has identified.

Folk Arts (Grade 6)

- A. Goal/Objective - The learner will develop a positive attitude toward folk art as an art form. The learner will further understand that contemporary art has its foundation in folk art.
- B. Activity - The students compare and contrast the facial makeup used in standard clown makeup today with the makeup used by clowns in a targeted European country.

Library/Media and Computer Skills (Grade 6)

- A. Goal/Objective - The learner will demonstrate an understanding of computers, their operation, and their possible application to solve relevant problems.
- B. Activity - The student will use a word processing program to create and produce a printed document such as a short report on "The Life of a Circus Performer."

Mathematics (Grade 6)

- A. Goal/Objective - The learner will demonstrate an understanding of decimals and their applications
- B. Activity - Students are allocated a given amount of spending money for an evening at the circus. They estimate the cost of souvenirs and snacks, and observe options before purchasing.

Safety (Grade 6)

- A. Goal/Objective - The learner will select and safely use recreational sites and equipment.
- B. Activity - Students examine the acts, setting, and backstage areas of a circus to identify the safety precautions taken by performers and in behalf of the audience. Students identify two examples of their own recreational activities in which they take similar precautions. Students then name one example of a recreational activity of their own that might be more dangerous than a similar circus activity because they do not use appropriate safety measures.

Science (Grade 6)

- A. Goal/Objective - The learner will have a general understanding of matter and energy.
- B. Activity - Materials needed are a candle or gas burner, iron washer, iron bolt (which fits the washer), tongs, and water. The teacher presents a "magic act" for the circus. The teacher slips the washer back and forth over the bolt. Next s/he holds the bolt with tongs and heats it in a candle and tries to slip the washer over the bolt. What do students observe? How do they explain this? The teacher follows by dipping the bolt into water and again slipping it through the washer. Does the bolt fit the washer? Why or why not?

Social Studies (Grade 6)

- A. Goal/Objective - The learner will know that change affects the lives of people.
- B. Activity - Students research the European background of the circus placing major emphasis on the Circus Maximus of ancient Rome and the Medieval fairs, carrying through to present day development in the United States. Using time lines, students plot significant events in the history of the circus and then discuss how changes in the circus have affected the lives of people.

Theatre Arts (Grade 6)

- A. Goal/Objective - The learner will develop confidence in personal observation and understanding while participating in creative drama activities.
- B. Activity - Students engage in a creative dramatic activity based on some aspect of circus life such as setting up a circus, walking a tight rope, taming the lion, etc.

Goal File Card #3 (Grades 9-12)

Focus: A problem . . . what survival skills are necessary if one is lost?

Communication Skills (Grades 9-12)

- A. Goal/Objective - The learner will recognize and read various types of literature (young adult). The learner will locate, organize, and synthesize information from a variety of sources.
- B. Activity - Students locate and read literature of people who depend on their own resources to survive.

Health (Grades 9-12)

- A. Goal/Objective - The learner will know proper skills for performing single person cardiopulmonary resuscitation (CPR).
- B. Activity - Students practice CPR skills on a mannequin.

Library/Media and Computer Skills (Grades 9-12)

- A. Goal/Objective - The learner will select and use materials and equipment appropriate to personal needs and classroom assignments.
- B. Activity - Students will prepare a research project either written or an audiovisual program on "How to Survive When Lost When _____ (in a foreign city, the forest, etc.).

Mathematics (Grades 9-12)

- A. Goal/Objective - The learner will be able to read, interpret, and use maps, graphs, charts, and tables.
- B. Activity - Using road maps students determine how to get from location A to location B.

Science (Grade 9-12)

- A. Goal/Objective - The learner will have a general understanding of astronomy.
- B. Activity - Materials needed are astrolabe, pencil, and notebook. One day a week at noon, students measure the altitude of the sun with an astrolabe. Students repeat this over several weeks. Students look for changes in the altitudes, and any patterns as well as an explanation for the changes.

Social Studies (Grade 9-12)

- A. Goal/Objective - (World Studies) - The learner will use maps and globes.
- B. Activity - Students draw a compass rose labeling all eight directions. Working from a map of the United States, students use their compass to indicate the directional locations of Alabama, Kentucky, South Carolina, and Tennessee to North Carolina.

Theatre Arts (Grade 9-12)

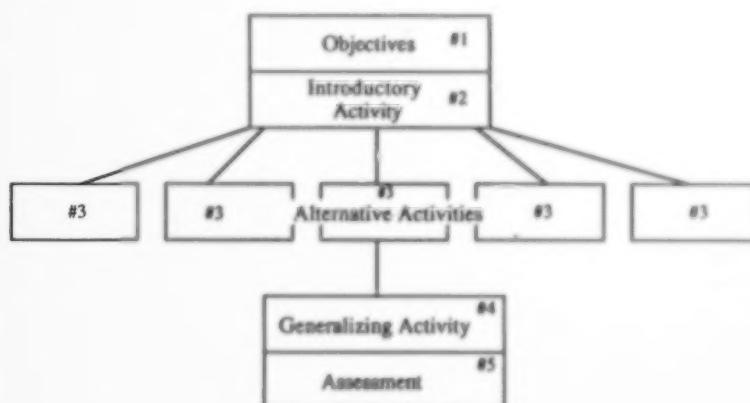
- A. Goal/Objective - The learner will design, illustrate, and make costumes from different periods and/or different styles.
- B. Activity - Students design clothing out of natural products such as leaves, branches, animal skins, feathers, and other found objects.

Vocational Education (Grade 9-12)

- A. Goal/Objective - The learner will identify naturally occurring food stuffs and use them in the preparation of food.
- B. Activity - Students prepare meals to eat from natural products such as leaves, weeds, tubers, etc.

Modular Thematic Units

Thematic units are not all alike in their structure or emphasis. One suggested format involves modules as organizers. Module #1 is a statement of the specific objectives from the various subject and skill areas. The introductory activity, Module #2, is intended to provide all students involved in the unit with a common view in order to communicate to them the goals of the unit and to establish a common view about the focus of the unit. Alternative activities, Module #3, are intended to provide learners with a variety of ways to move toward the objectives of the unit. Generally, the alternatives would provide not only a variety of topics, but also alternative learning modes, types of activities, and sources of data. The teacher will usually encourage pupils to choose and complete several of the alternatives (which may take the form of learning stations, individual learning activities, or group investigations) in order to enable the learner to develop skill toward self-directed learning. Occasionally, it may be appropriate for all learners to complete all the alternatives. The generalizing activity, Module #4, will enable the learners to apply and synthesize through a common experience the learnings they have acquired through participation in the alternative activities. A major purpose of the generalizing activity is to lead to Module #5 where the teacher and the learners assess how well the objectives of the unit have been met (Kneip, 1979).



Internal Structure of the Thematic Unit

Figure 5

A SAMPLE PLAN: STEPS FOR INTEGRATION

There is no one set of steps used to integrate a school's curriculum, regardless of the kind of integration being attempted. Each individual teacher or team typically develops its own style of planning and determines the sequence of events to be followed (Kneip, 1979). No attempt is made here to prescribe rigid procedures but instead to show a sample plan of total integration from beginning to end. Veteran teachers will find many steps already accomplished in routine planning. Though this particular plan is centered around a unifying theme, the sequence of work and processes can be adapted to any form of integration.

- A. Four Conditions of Success - The individual teacher or group of teachers would consider the four conditions for success (personnel, time, resources, facilities) to determine the merits of their particular situation. Obstacles can be overcome but there must be an acceptance of a limitation or a plan to overcome it.
- B. Grade Level Goals - Teachers would first meet to discuss their particular areas at a given grade level giving the basic scope of their disciplines. The purpose of such a meeting is to acquaint teachers with the basics of each discipline and to consider a variety of possibilities (Bartkowski and Morse, 1979).
- C. Focal Point - Teachers would then select a theme or central idea as a focal point for integrating educational goals and activities. The unifying idea could reflect any one of the five kinds of integration. The theme "should not be just a problem, activity, or a topic to study, but a combination of all three, a vehicle that models real life learning" (Holt and Kraut, 1975). Themes may best evolve through a brainstorming activity. Criteria for theme selection should include: potential for direct linkage to goals in the Standard Course of Study; the richness of possibilities for classroom activities; and, the overall relevance and excitement to students. It is critical that the theme be meaningful to the lives of students and that the activities, content, and methodology stimulate the student's interest and curiosity and lead her/him toward a personal involvement in learning. In addition, an effective theme will provide a clear focus for activities but at the same time be open-ended enough to incorporate future alternatives and additions.

Once a unifying idea is agreed upon, teachers may take one of two routes to develop the unit.

D. Plan 1: Goals to Activities

1. Teachers would select specific goals and/or objectives for students from their area(s). Using index cards, each goal would be listed with a code for the teacher's subject or skill area.
2. Teachers would then meet to examine all goals/objectives putting the cards out side by side looking for duplication and natural linkages. Teachers would mark the cards to show goals/objectives represented by more than one subject or skill area. Through teacher discussion,

agreement would be reached on the most appropriate goals/objectives. The self-contained teacher would proceed with this process either alone, with resource teachers, and/or with a grade level team.

3. Each teacher would develop relevant activities under selected goals/objectives.
4. Once activities are listed under objectives, blending and molding the activities will need to occur. Activities may mesh together under one objective or across objectives such that new sub-themes evolve under the main theme. Teachers must be able to follow a pattern and at the same time not rob students of the joy of discovery. The blending of activities is one of the most difficult aspects of developing integrated programs. Under the umbrella of a unifying idea, teachers must protect the integrity of the goals in their area and at the same time mesh activities so the whole project flows logically and with meaning for students.

Plan 2: Activities to Goals

1. With the goals of the Standard Course of Study in mind, teachers would develop activities for students in their area(s). Using index cards, activities could be listed with a code for the teachers subject or skill area. The self-contained teacher would proceed alone, with resource teachers, and/or with a grade level team.
 2. Teachers would then examine all activities putting activities side by side looking for duplication, natural tie-ins, and expansions. Teachers would mark the cards to show activities represented by more than one subject or skill area.
 3. Once the most appropriate activities were selected, the activities would need to be blended and molded into a whole. Under the umbrella of a unifying idea, the activities must be organized into a logical sequence.
 4. Teachers at this point must return to the goals in the Standard Course of Study documenting which goals are addressed in each activity.
- F. Culminating Event - Whether teachers use Plan 1 or Plan 2, an integrated learning study that involves several subject and skill areas is best ended with a special culminating event. In most cases, such an event serves to synthesize, evaluate, and bring the entire study to a logical conclusion.
- G. Supplies and Materials - Teachers must find appropriate supplies and materials to develop such a unit. Though many teachers may have already listed needed resources with their activities, a whole-group discussion of each activity and corresponding needs is necessary to assure everyone's knowledge of available materials. Principals, media specialists, central office personnel, and regional center coordinators are all individuals to call on for assistance in obtaining needed materials.

- H. Evaluation - Evaluative measures must be an ongoing aspect of the study. Teachers should use several methods to determine if a student is able to meet successfully the selected goals/objectives.

Note: There is no pre-established time to work through an integrated program. If, however, the integration occurs around a theme and is developed as a unit, teachers usually allow two to four weeks for implementation (Bartkowski and Morse, 1979).

The following figure gives an overview of this entire process.

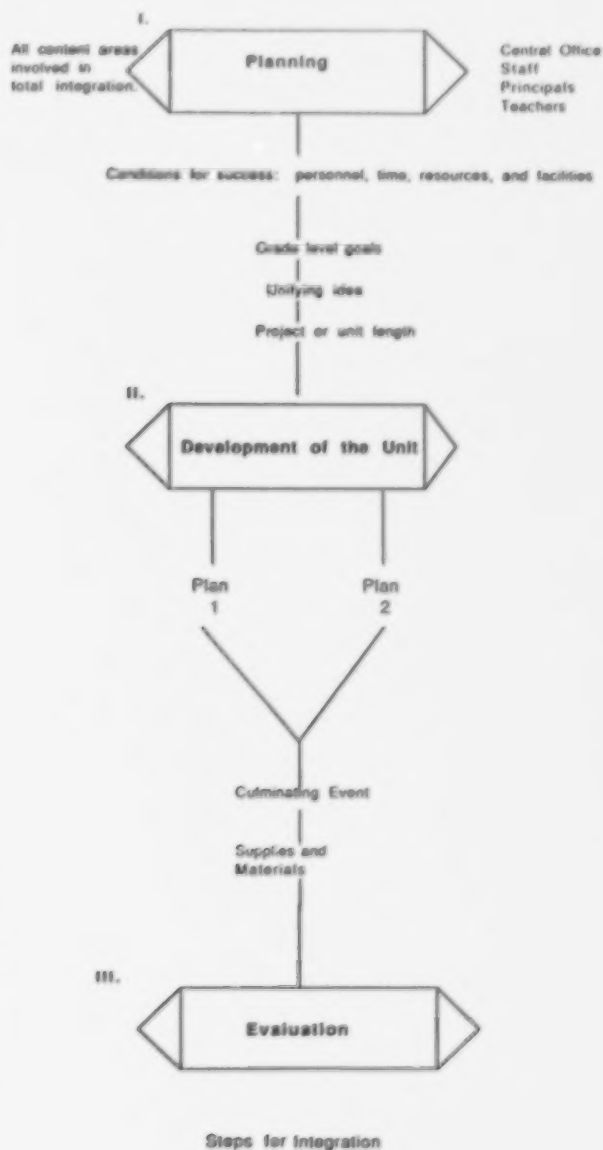


Figure 6

CONCLUSION

Integrating the curriculum is not a "frill" endeavor but an approach that requires greater connectedness in all aspects of school programs. Through teachers communicating, coordinating, and collaborating, students gain a unified view of learning and its purposes.

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